

# On types of trochilids in The Natural History Museum, Tring II. Re-evaluation of *Erythronota* (?) *elegans* Gould 1860: a presumed extinct species of the genus *Chlorostilbon*

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Among the hummingbird types once included in the heterogeneous group of *Amazilia*, *Erythronota* (?) *elegans* (Gould 1860) has remained of questionable status since its discovery. Subsequently, Gould (1861, p. 162) mentioned its "distinctiveness from every other Hummingbird", mainly with regard to the contrasting, bifurcated tail (see morphological characters; Table 1). However, he also noted similarities in the colouration of crown, throat, and chest to *Chlorostilbon* species. Elliot (1878) and Salvin (1892) supposed *elegans* to be member of the genus *Amazilia*; to Salvin, it closely resembled *Amazilia erythronota* (= *A. tobaci erythronotos*). Without further examination, Ridgway (1911) accepted Salvin's opinion. Subsequently, Simon (1921), who greatly confused the taxonomy of many critical genera including *Amazilia* and *Chlorostilbon*, placed the bird in the group *Saucerottea* (= *Saucerottia*; merged with *Amazilia* by Peters 1945), with such species as *S. tobaci*, *S. viridigaster*, and *S. beryllina*. Peters (1945), although listing the type under *Amazilia*, was uncertain as to its status.

TABLE 1

Comparison of morphometric characters in *Erythronota* (*Chlorostilbon*) *elegans* and *Chlorostilbon ricordii*, showing range (n), mean, and standard deviation; analysis includes *C. ricordii* specimens from Cuba (*C. r. ricordii*) and Abaco (*C. r. aeneoviridis*). Note the congruent data for bill and wing length in *C. elegans* and *C. ricordii*, but differences for tail (less forked, shorter outer rectrices in *C. elegans*), m, male; f, female

Taxon	Biometric data			
	Bill (mm)	Wing (mm)	Rectrix # 1 (mm)	Rectrix # 5 (mm)
<i>E. (C.) elegans</i> Gould, 1860	m: 18.8	52.5	25.5	36.5
<i>C. r. ricordii</i> Gervais, 1835	m: 17.0–19.6 (18)	49.3–54.5 (18)	20.1–22.9 (19)	41.2–46.9 (17)
	18.02 ± 0.64	52.69 ± 1.38	21.69 ± 0.84	44.10 ± 1.75
	f: 18.3–19.7 (7)	50.2–52.7 (9)	21.9–23.7 (8)	38.7–41.8 (9)
<i>C. r. aeneoviridis</i> Palmer & Riley, 1902	18.94 ± 0.54	51.50 ± 0.97	22.72 ± 0.71	40.26 ± 1.21
	m: 18.0, 18.2	52.0–53.6 (4)	22.9, 24.6	40.6, 40.9
	52.95 ± 0.75	52.95 ± 0.75		
	f: 18.9–19.2 (3)	50.2–51.8 (3)	24.3–26.7	38.3, 41.0
	19.03 ± 0.15	51.10 ± 0.82	25.43 ± 1.21	

Recently, Walters (1980) and Wolters (1982) suggested possible species status as *Amazilia elegans*, whereas Sibley & Monroe (1990) completely ignored the specimen.

Due to these historic uncertainties, in the course of biogeographic and taxonomic studies of all *Amazilia* species I examined the type to re-evaluate its systematic position. Morphological evidence from this suggests that *E. elegans* represents an extinct member of the genus *Chlorostilbon*.

### Material and methods

Morphological characters and morphometric data of the *Erythronota* (?) *elegans* type, BMNH 188.7.25.140 (locality and sex unknown), were directly compared with phenotypic characters of other trochilid genera in The Natural History Museum (BMNH) bird collection, especially species of *Amazilia* and *Chlorostilbon* (including types; see Warren 1966). Photographs of the type enabled comparison with specimen series abroad. Analysis of morphometric characters comprised measurements of the bill (proximal end of nasal operculum to tip), wings, and tail (rectrices 1, 5). As colours in *Amazilia* and *Chlorostilbon* species (subfamily: Trochilinae) are mainly iridescent, general descriptions of plumage patterns were made from subjective impressions but with reference to the type or selected individuals; other colours mentioned in the text refer to Smithe (1975).

### Results and discussion

#### *Morphological characters*

The *E. elegans* specimen (Plate 3) has an entirely dark golden-green body plumage with brighter reflections on the rump. The uppertail coverts are copperish, becoming dark purple towards the tail and in the rectrices (tips dark bronze), the latter not being narrowed. As a characteristic feature, the tail is relatively strongly forked (11.0 mm; Table 1). The golden to bronze-green centres of the undertail coverts are edged whitish to pale cream coloured (Smithe, Colour 54). The bill is straight and medium-sized (19.0 mm), with the upper mandible blackish except for the basal third that appears pale horn coloured (in life possibly reddish), as is the whole lower mandible.

With regard to significant plumage and morphometric features, especially of bill and rectrices, the examination yielded no proof that the specimen is either an immature or moulting individual. No other trochilid genus except for *Chlorostilbon* and several species of *Amazilia* (subgenus *Saucerottia*) shows such a character combination, including bill morphology (Table 1). Nevertheless, the possibility that *E. elegans* might be a hybrid must be considered.

#### *Intergeneric hybrid origin of E. elegans?*

As for all possible hybrids, the evaluation of parental origin has to be judged geographically and morphologically. For the reasons given above, I only considered taxa of *Chlorostilbon* and *Amazilia* to be



Plate 3. Type specimen of *Erythronota* (*Chlorostilbon*) *elegans* Gould, BMNH 1888.7.25.140, dorsal view (A) and ventral view (B; scale on the right: mm units). Note the relatively dark (purple), forked tail (A), and the colouration pattern in the undertail coverts (B).



possible parental species of *E. elegans*. First, I looked for features not clearly derived from one of these genera. Interestingly, only one main diagnostic character could be judged intermediate between *Chlorostilbon* and *Amazilia*, the depth of tail bifurcation. Only a few *Amazilia* taxa of the present subgenus *Saucerottia* show a bifurcated tail that coincides with the morphology described for *E. elegans*, i.e. *A. s. saucerrottei* (max. 7.0 mm), subspecies of *A. tobaci* (max. 7.0–9.5 mm), and *A. viridigaster* (max. 6.5 mm; all measurements for males, not listed separately). Yet the length of the outer rectrices of these taxa is reduced compared with the *E. elegans* type, in general reaching barely 31 mm (up to 34 mm in males of some *A. tobaci* spp.). Furthermore, only three present *Chlorostilbon* species (all maximum values, for males: *C. aureoventris*—35 mm; *C. swainsonii*—50 mm; *C. ricordii*—46.5 mm, see Table 1) possess considerably longer outer rectrices than these *Amazilia* species, thus potentially qualifying as one parental species of *E. elegans*. Second, I looked for regions where parental species that could produce an appropriate hybrid occur sympatrically. However, there is no overlap at all between any of the above mentioned *Chlorostilbon* species with the relevant taxa of *Amazilia*. *C. aureoventris*, the only member of the genus inhabiting the mainland of South America, occurs farther south (Bolivia to Brazil, Argentina) than the northwestern distributed *A. s. saucerrottei* (Colombia), *A. viridigaster* (Colombia, Venezuela), and *A. tobaci* (Venezuela, Trinidad, Tobago). The remaining *Chlorostilbon* taxa are presently endemic to Caribbean islands (*C. ricordii*: chiefly Cuba, Bahamas; *C. swainsonii*: Hispaniola), with the exception of *C. bracei* [formerly New Providence Island, now believed to be extinct (Graves & Olson 1987)].

Based on these distributional and phenotypic findings, an intergeneric hybrid origin for *E. elegans* should be rejected. It is more probable that *E. elegans* represents a unique specimen of a so far unrecognized species. In view of all plumage characters, the type is more closely related to *Chlorostilbon* than to *Amazilia* or any other trochilid genus. As I will demonstrate below, morphology and morphometry indicate a close relationship to the *C. ricordii-bracei* group.

#### *Intrageneric classification*

Within the presumed genus *Chlorostilbon*, I reviewed colour patterns and mensural data of all generic members. *Chlorostilbon* is considered to comprise 11 (Bündgen, pers. comm.) to 13 species (Sibley & Monroe 1990), with the overwhelming majority inhabiting the northern parts of South America (8) and Caribbean islands (4). Only one species, *C. mellisugus*, reaches Central America (ssp. *assimilis*, *canivetii*, *forficatus*, *salvini*; ssp. *auriceps* up to 17°N, Bündgen, pers. comm.).

With regard to length and colouration of the tail in *E. elegans*, three criteria are important to narrow the pool of potential parental species: 1. species with conspicuously elongated outer tail feathers; 2. species with a contrasting pattern on the back and tail; 3. species with contrasting, whitish bordered undertail coverts. Species not exhibiting this combination of characters were excluded from further analysis of

their possible relation to *E. elegans*. As sexes in *Chlorostilbon* are highly dichromatic, the colouration of the type is clearly that of a male. Thus, the following descriptions and comparisons refer to males.

Three species that lack all relevant characters are *C. alicae*, *C. poortmani*, and *C. stenurus*, which have entirely green tail feathers and undertail coverts and relatively short outer rectrices. By contrast, *C. russatus* has brighter, golden copper tail feathers. The Caribbean taxon *C. mellisugus canivetii* is characterized by a longer but dull bronze-green tail. In all other South American taxa and in *C. maugaeus* (Puerto Rico), the underparts and undertail coverts are greenish but contrast with the dark blue to bluish-black tail. Moreover, in several taxa other apomorphic characters can be observed that do not fit the description of *elegans*. For example, *C. aureoventris* shows a golden to bronze-coloured belly and a shining turquoise throat; the latter feature is also exhibited by *C. prasinus* and *C. maugaeus*. In *C. stenura*, the outer rectrices are conspicuously narrowed.

The results of this analysis leave only two geographically isolated species remaining, that occur on different islands of the Caribbean Sea. One of them, *C. bracei* (Lawrence, 1877), was described from a single specimen from New Providence Island, Bahamas, and seems likely to have become extinct at the end of the last century (Graves & Olson 1987). Compared with *E. elegans*, the *C. bracei* holotype (male) can be differentiated in plumage colouration by, e.g., the entirely dark lower mandible, the reddish-bronze back, the bronze-green breast, abdomen, and tail, and greyish-whitish undertail coverts.

Of all members of the genus, *C. ricordii* clearly shares the most similarities with *E. elegans*. This hummingbird is restricted to Cuba, the Isle of Pines, and some northern Bahamas (Peters 1945, Bond 1947) where it is a common resident (Bond 1979, Raffaele *et al.* 1998). The recognition of geographic variation in *C. ricordii* led to the distinction of further races such as *C. r. aeneoviridis* (Palmer & Riley 1902), a taxon recently placed in synonymy with nominate *C. ricordii* (Graves & Olson 1987). While comparing *E. elegans* with the series of *C. ricordii* in The Natural History Museum, I found evidence that the type more closely resembles the *aeneoviridis* form, although the sample size was small (*C. r. aeneoviridis*: n=7, Abajo Island; *C. r. ricordii*: n=13, Cuba). *C. r. aeneoviridis* looks more golden green on the upper surface than the nominate form, a character also pronounced in the *elegans* type.

However, such resemblance is more than offset by striking differences. With respect to *C. ricordii*, *E. elegans* has more contrasting copper to purplish uppertail coverts and a dark purplish tail. In *C. ricordii*, these plumage parts and the innermost rectrices are more golden-bronze to copperish, whereas the outer rectrices are mainly blackish-green, rarely with a purplish tinge. Obvious contrasts are also found in the undertail coverts. In this character, *elegans* exhibits golden to bronze-green centres, more narrowly edged with white, whereas *C. ricordii* possesses broader white borders and dark brownish centres, sometimes with green basally. *E. elegans* and some specimens of *C. ricordii* do not show the tiny post-ocular patch typical for the genus